

SEQUENCE LISTING

<110> Gerald, Christophe P.G.  
Jones, Kenneth A.  
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Borowsky, Beth E.  
Craig, Douglas A.

<120> DNA Encoding Mammalian Neuropeptide FF (NPFF) Receptors  
And Uses Thereof

<130> 57155-D/JPW

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<150> 09/405,558  
<151> 1999-09-24

<150> 09/255,368  
<151> 1999-02-22

<150> 09/161,113  
<151> 1998-09-25

<160> 71

<170> PatentIn Ver. 2.1

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<213> Rattus norvegicus

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cagaacggga gtatgttgg aaccaggatg gcaaccagcc tcaccctctc ctcctactac 180  
caacactcct ctccgggtggc agccatgttc atcgcggcct acgtgctcat cttcctcctc 240  
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gtcaccaaca tgtttatcct caaccctggcc gtcagcgacc tgctggtggg catcttctgc 360  
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aaggcgctgt tcaccatcgc ggtgatctgg gctctggcgc tgctcatcat gtgtccctcg 600  
gcggtcactc tgacagtcac ccgagaggag catcaattca tgctggatgc tcgtaaccgc 660  
tcctaccgc tctactcgtg ctgggaggcc tggcccgaga agggcatgcg caaggtctac 720  
accgcgggtgc tcttcgcgc catctacatg gtggccgtgg cgctcatcgt agtgtatgtac 780

gtgcgcatcg cgcgcaagct atgccaggcc cccggtcctg cgcgacac ggaggaggcg 840  
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gtggcgctct tcttcacgtt gtcctggctg ccactctggg tgctgctgct gctcatcgac 960  
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<213> Rattus norvegicus

<400> 2  
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Gln Asn Gly Ser Asp Val Glu Thr Ser Met Ala Thr Ser Leu Thr Phe  
20 25 30  
  
Ser Ser Tyr Tyr Gln His Ser Ser Pro Val Ala Ala Met Phe Ile Ala  
35 40 45  
  
Ala Tyr Val Leu Ile Phe Leu Leu Cys Met Val Gly Asn Thr Leu Val  
50 55 60  
  
Cys Phe Ile Val Leu Lys Asn Arg His Met Arg Thr Val Thr Asn Met  
65 70 75 80  
  
Phe Ile Leu Asn Leu Ala Val Ser Asp Leu Leu Val Gly Ile Phe Cys  
85 90 95  
  
Met Pro Thr Thr Leu Val Asp Asn Leu Ile Thr Gly Trp Pro Phe Asp  
100 105 110  
  
Asn Ala Thr Cys Lys Met Ser Gly Leu Val Gln Gly Met Ser Val Ser  
115 120 125  
  
Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Glu Arg Phe Arg Cys  
130 135 140  
  
Ile Val His Pro Phe Arg Glu Lys Leu Thr Leu Arg Lys Ala Leu Phe  
145 150 155 160

Thr Ile Ala Val Ile Trp Ala Leu Ala Leu Leu Ile Met Cys Pro Ser  
165 170 175

Ala Val Thr Leu Thr Val Thr Arg Glu Glu His His Phe Met Leu Asp  
180 185 190

Ala Arg Asn Arg Ser Tyr Pro Leu Tyr Ser Cys Trp Glu Ala Trp Pro  
195 200 205

Glu Lys Gly Met Arg Lys Val Tyr Thr Ala Val Leu Phe Ala His Ile  
210 215 220

Tyr Leu Val Pro Leu Ala Leu Ile Val Val Met Tyr Val Arg Ile Ala  
225 230 235 240

Arg Lys Leu Cys Gln Ala Pro Gly Pro Ala Arg Asp Thr Glu Glu Ala  
245 250 255

Val Ala Glu Gly Gly Arg Thr Ser Arg Arg Arg Ala Arg Val Val His  
260 265 270

Met Leu Val Met Val Ala Leu Phe Phe Thr Leu Ser Trp Leu Pro Leu  
275 280 285

Trp Val Leu Leu Leu Ile Asp Tyr Gly Glu Leu Ser Glu Leu Gln  
290 295 300

Leu His Leu Leu Ser Val Tyr Ala Phe Pro Leu Ala His Trp Leu Ala  
305 310 315 320

Phe Phe His Ser Ser Ala Asn Pro Ile Ile Tyr Gly Tyr Phe Asn Glu  
325 330 335

Asn Phe Arg Arg Gly Phe Gln Ala Ala Phe Arg Ala Gln Leu Cys Trp  
340 345 350

Pro Pro Trp Ala Ala His Lys Gln Ala Tyr Ser Glu Arg Pro Asn Arg  
355 360 365

Leu Leu Arg Arg Arg Val Val Asp Val Gln Pro Ser Asp Ser Gly  
370 375 380

Leu Pro Ser Glu Ser Gly Pro Ser Ser Gly Val Pro Gly Pro Gly Arg  
385 390 395 400

Leu Pro Leu Arg Asn Gly Arg Val Ala His Gln Asp Gly Pro Gly Glu  
405 410 415

Gly Pro Gly Cys Asn His Met Pro Leu Thr Ile Pro Ala Trp Asn Ile  
420 425 430

<210> 3  
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<212> DNA  
<213> Homo sapiens

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gccccatgttca ttgtggccta tgcgctcatc ttcctgctct gcatggtggg caacaccctg 180  
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<213> Homo sapiens

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Thr Asn Thr Glu Ala Thr Pro Ala Thr Asn Leu Thr Phe Ser Ser Tyr  
20 25 30

Tyr Gln His Thr Ser Pro Val Ala Ala Met Phe Ile Val Ala Tyr Ala  
35 40 45

Leu Ile Phe Leu Leu Cys Met Val Gly Asn Thr Leu Val Cys Phe Ile  
50 55 60

Val Leu  
65

<210> 5  
<211> 1302  
<212> DNA  
<213> Homo sapiens

<400> 5

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gaaaactggc atccccatctg gaatgtcaat gacacaaagc atcatctgtt ctcagatatt 120  
aatattacct atgtgaacta ctatcttac cagcctcaag tggcagcaat cttcatttatt 180  
tcctactttc tgatcttctt tttgtgcatt atgggaaata ctgtggttt ctttattgtt 240  
atgaggaaca aacatatgca cacagtcact aatctcttca tcttaaacct ggccataagt 300  
gatttactag ttggcatatt ctgcatgcct ataacactgc tggacaatat tatagcagga 360  
tggccatttg gaaacacgat gtgcaagatc agtggatgg tccagggat atctgtcgca 420  
gcttcagtct ttacgttagt tgcaattgtt gtagataagg tccagtggtt ggtctaccct 480  
tttaaaccctt agctcaactat caagacagcg tttgtcattt ttatgatcat ctgggtccta 540  
gccatcacca ttatgtctcc atctgcagta atgttacatg tgcaagaaga aaaatattac 600  
cgagtgagac tcaactccca gaataaaacc agtccagttt actggtgccg ggaagactgg 660  
ccaaatcagg aaatgaggaa gatctacacc actgtgtgtt ttgccaacat ctacctggct 720  
ccccctctccc tcattgtcat catgtatgga aggattggaa tttcacttctt cagggctgca 780  
gttcctcaca caggcaggaa gaaccaggag cagtggcacg tgggtgtccag gaagaagcag 840  
aagatcatta agatgtctt gattgtggcc ctgtttttt ttctctcatg gctgcccctg 900  
tggactctaa tgatgtctc agactacgct gacctttctc caaatgaact gcagatcatc 960  
aacatctaca tctacccttt tgcacactgg ctggcattcg gcaacagcag tgtcaatccc 1020  
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gtgctcataa acacatctaa tcagcttgc caggaatcta catttcaaaa ccctcatggg 1200  
gaaaccttgc ttatagggaa aagtgtgaa aaaccccaac aggaatttagt gatgaaagaa 1260  
ttaaaagaaa ctactaacag cagttagatt taaaagagc ta 1302

<210> 6

<211> 420

<212> PRT

<213> Homo sapiens

<400> 6

Met Asn Glu Lys Trp Asp Thr Asn Ser Ser Glu Asn Trp His Pro Ile  
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Trp Asn Val Asn Asp Thr Lys His His Leu Tyr Ser Asp Ile Asn Ile  
20 25 30

Thr Tyr Val Asn Tyr Tyr Leu His Gln Pro Gln Val Ala Ala Ile Phe  
 35 40 45

Ile Ile Ser Tyr Phe Leu Ile Phe Phe Leu Cys Met Met Gly Asn Thr  
50 55 60

Val Val Cys Phe Ile Val Met Arg Asn Lys His Met His Thr Val Thr  
65 70 75 80

Asn Leu Phe Ile Leu Asn Leu Ala Ile Ser Asp Leu Leu Val Gly Ile  
85 90 95

Phe Cys Met Pro Ile Thr Leu Leu Asp Asn Ile Ile Ala Gly Trp Pro  
100 105 110

Phe Gly Asn Thr Met Cys Lys Ile Ser Gly Leu Val Gln Gly Ile Ser  
115 120 125

Val Ala Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Asp Arg Phe  
130 135 140

Gln Cys Val Val Tyr Pro Phe Lys Pro Lys Leu Thr Ile Lys Thr Ala  
145 150 155 160

Phe Val Ile Ile Met Ile Ile Trp Val Leu Ala Ile Thr Ile Met Ser  
165 170 175

Pro Ser Ala Val Met Leu His Val Gln Glu Glu Lys Tyr Tyr Arg Val  
180 185 190

Arg Leu Asn Ser Gln Asn Lys Thr Ser Pro Val Tyr Trp Cys Arg Glu  
195 200 205

Asp Trp Pro Asn Gln Glu Met Arg Lys Ile Tyr Thr Thr Val Leu Phe  
210 215 220

Ala Asn Ile Tyr Leu Ala Pro Leu Ser Leu Ile Val Ile Met Tyr Gly  
225 230 235 240

Arg Ile Gly Ile Ser Leu Phe Arg Ala Ala Val Pro His Thr Gly Arg  
245 250 255

Lys Asn Gln Glu Gln Trp His Val Val Ser Arg Lys Lys Gln Lys Ile  
260 265 270

Ile Lys Met Leu Leu Ile Val Ala Leu Leu Phe Ile Leu Ser Trp Leu  
275 280 285

Pro Leu Trp Thr Leu Met Met Leu Ser Asp Tyr Ala Asp Leu Ser Pro  
290 295 300

Asn Glu Leu Gln Ile Ile Asn Ile Tyr Ile Tyr Pro Phe Ala His Trp  
305 310 315 320

Leu Ala Phe Gly Asn Ser Ser Val Asn Pro Ile Ile Tyr Gly Phe Phe  
325 330 335

Asn Glu Asn Phe Arg Arg Gly Phe Gln Glu Ala Phe Gln Leu Gln Leu  
340 345 350

Cys Gln Lys Arg Ala Lys Pro Met Glu Ala Tyr Ala Leu Lys Ala Lys  
355 360 365

Ser His Val Leu Ile Asn Thr Ser Asn Gln Leu Val Gln Glu Ser Thr  
370 375 380

Phe Gln Asn Pro His Gly Glu Thr Leu Leu Tyr Arg Lys Ser Ala Glu  
385 390 395 400

Lys Pro Gln Gln Glu Leu Val Met Glu Glu Leu Lys Glu Thr Thr Asn  
405 410 415

Ser Ser Glu Ile  
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<210> 7

<211> 1293

<212> DNA

<213> Homo sapiens

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cctgtggccg ccatgttcat tgtggcctat ggcgtcatct tcctgctctg catggtggc 180  
aacaccctgg tctgtttcat cgtgctcaag aaccggcaca tgcatactgt caccaacatg 240  
ttcatcctca acctggctgt cagtgacctg ctgggtggca tcttctgcat gcccaccacc 300  
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accgtcaccc gtgaggagca ccacttcatg gtggacgcgc gcaaccgctc ctaccctctc 600  
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gcatcgccgc gcagagcgcg cgtgggtgcac atgctggtca tgggtggcgct gttcttcacg 840  
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<212> PRT

<213> Homo sapiens

<400> 8

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Gln Asn Gly Thr Asn Thr Glu Ala Thr Pro Ala Thr Asn Leu Thr Phe  
20 25 30

Ser Ser Tyr Tyr Gln His Thr Ser Pro Val Ala Ala Met Phe Ile Val  
35 40 45

Ala Tyr Ala Leu Ile Phe Leu Leu Cys Met Val Gly Asn Thr Leu Val  
50 55 60

Cys Phe Ile Val Leu Lys Asn Arg His Met His Thr Val Thr Asn Met  
65 70 75 80

Phe Ile Leu Asn Leu Ala Val Ser Asp Leu Leu Val Gly Ile Phe Cys  
85 90 95

Met Pro Thr Thr Leu Val Asp Asn Leu Ile Thr Gly Trp Pro Phe Asp  
100 105 110

Asn Ala Thr Cys Lys Met Ser Gly Leu Val Gln Gly Met Ser Val Ser  
115 120 125

Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Glu Arg Phe Arg Cys  
130 135 140

Ile Val His Pro Phe Arg Glu Lys Leu Thr Leu Arg Lys Ala Leu Val  
145 150 155 160

Thr Ile Ala Val Ile Trp Ala Leu Ala Leu Ile Met Cys Pro Ser  
165 170 175

Ala Val Thr Leu Thr Val Thr Arg Glu Glu His His Phe Met Val Asp  
180 185 190

Ala Arg Asn Arg Ser Tyr Pro Leu Tyr Ser Cys Trp Glu Ala Trp Pro  
195 200 205

Glu Lys Gly Met Arg Arg Val Tyr Thr Thr Val Leu Phe Ser His Ile  
210 215 220

Tyr Leu Ala Pro Leu Ala Leu Ile Val Val Met Tyr Ala Arg Ile Ala  
225 230 235 240

Arg Lys Leu Cys Gln Ala Pro Gly Pro Ala Pro Gly Gly Glu Glu Ala  
245 250 255

Ala Asp Pro Arg Ala Ser Arg Arg Arg Ala Arg Val Val His Met Leu  
260 265 270

Val Met Val Ala Leu Phe Phe Thr Leu Ser Trp Leu Pro Leu Trp Ala  
275 280 285

Leu Leu Leu Ile Asp Tyr Gly Gln Leu Ser Ala Pro Gln Leu His  
290 295 300

Leu Val Thr Val Tyr Ala Phe Pro Phe Ala His Trp Leu Ala Phe Phe  
305 310 315 320

Asn Ser Ser Ala Asn Pro Ile Ile Tyr Gly Tyr Phe Asn Glu Asn Phe  
325 330 335

Arg Arg Gly Phe Gln Ala Ala Phe Arg Ala Arg Leu Cys Pro Arg Pro  
340 345 350

Ser Gly Ser His Lys Glu Ala Tyr Ser Glu Arg Pro Gly Gly Leu Leu  
355 360 365

His Arg Arg Val Phe Val Val Val Arg Pro Ser Asp Ser Gly Leu Pro  
370 375 380

Ser Glu Ser Gly Pro Ser Ser Gly Ala Pro Arg Pro Gly Arg Leu Pro  
385 390 395 400

Leu Arg Asn Gly Arg Val Ala His His Gly Leu Pro Arg Glu Gly Pro  
405 410 415

Gly Cys Ser His Leu Pro Leu Thr Ile Pro Ala Trp Asp Ile  
420 425 430

<210> 9  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer/probe  
  
<220>  
<223> n = a, c, t, or g

<400> 9  
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23

<210> 10  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer/probe

<220>  
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<400> 10  
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23

<210> 11  
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<212> DNA  
<213> Artificial Sequence

<220>  
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<210> 12  
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<212> DNA  
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<220>  
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26

<210> 13  
<211> 26  
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<223> Description of Artificial Sequence: primer/probe

<400> 13

ggtgctgctg ctgctcatcg actatg

26

<210> 14

<211> 26

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 14

ttggcgctgc tgtggaagaa ggccag

26

<210> 15

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 15

cggtgctctt cgcgacatc tacc

24

<210> 16

<211> 60

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 16

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<210> 17

<211> 53

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 17  
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<210> 18  
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<220>  
<223> Description of Artificial Sequence: primer/probe

<400> 18  
ctgctctgca tggtgggcaa cacc 24

<210> 19  
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<212> DNA  
<213> Artificial Sequence

<220>  
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<210> 20  
<211> 65  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer/probe

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atgcc 65

<210> 21  
<211> 24  
<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 21

gcgagaagct gaccctgcgg aagg

24

<210> 22

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

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24

<210> 23

<211> 24

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 23

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24

<210> 24

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 24

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23

<210> 25

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 25

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23

<210> 26

<211> 35

<212> DNA

<213> Artificial Sequence

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<223> Description of Artificial Sequence: primer/probe

<400> 26

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35

<210> 27

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 27

tttcatgaat tcatcgcttg catgtatctc gtgtcc

36

<210> 28

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 28

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31

<210> 29

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 29

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27

<210> 30

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 30

actcactata gggctcgagc ggc

23

<210> 31

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 31

tgatagtgag ctttggttta aaaggg

26

<210> 32

<211> 26

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 32

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26

<210> 33

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 33

aacatctacc tggctccct ctccc

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<210> 34

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 34

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25

<210> 35

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 35

gaccacacac tggAACCTAT ctac

24

<210> 36

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 36

gcaattgcaa ctaacgtaaa gactg

25

<210> 37

<211> 37

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

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tagcaaggat ccgaggttca tcatgaatga gaaatgg

37

<210> 38

<211> 36

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 38

tttcatgaat tcgcgttagta gagttaggat tatac

36

<210> 39

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 39

ctcctactac caacactcct ctcc

24

<210> 40

<211> 19

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 40

acgggttacg agcatccag

19

<210> 41

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 41

gatcagtgga ttgggtccagg gaatatac

27

<210> 42

<211> 25

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 42

ccaggttagat gttggcaaac agcac

25

<210> 43

<211> 1334

<212> DNA

<213> Rattus norvegicus

<400> 43

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cacatacatg aactactatc tccaccagcc ccacgtgaca gctgtcttca ttagctccta 180  
cttcctgatc ttcttcgtgt gcatggggg aaacactgtc gtttgctttg ttgtaataag 240  
gaataggtac atgcacacgg tcactaattt cttcatcttc aacctcgcaa taagtgactt 300  
actgggttggaa atattctgca tgcctatcac attgctggac aacatcatag caggatggcc 360  
gtttggaagc agcatgtgca agatcagcgg gctggtgcaa gggatatcgg ttgccgcctc 420  
tgtcttcacc ttggttgcca tagccgtaga cagattccgg ttgtggctc accccttaa 480  
gcccaagctc actgtcaaga cagccttgc catgatcgtg atcatctggg gcctggccat 540  
caccattatg accccatctg caatcatgtt acatgtacag gaagaaaaat actaccgtgt 600  
gaggctcagc tccccacaata aaaccacgac agtctactgg tgcggggagg attggccaaa 660  
ccaggaaatg aggaggatct acaccacgt gctcttgcc actatctacc tggctccact 720  
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cagcacaggt aagcagcgc tggagcagt gcatgtatcc aagaagaaac agaaggatcat 840  
caagatgctg ctgactgtgg ccctcccttt catcctttcc tggcttcccc tggactct 900  
gatgatgctc tcagactatg ctgacccgtc acctaacaaa ctacgtgtca tcaatattta 960  
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atctggcctg ttgggtccatg aacctgcattc tcaaaaacca agtggggaaa acttgggatg 1200  
tagaaaaagt gcagacaatc ccacacagga atcccttgatg gagaaaacgg gagaagctac 1260

caacagtact gagacttaga aagatagtat gctatccaat gttatatagc atacgaagcc 1320  
aactccgatg gctg 1334

<210> 44

<211> 417

<212> PRT

<213> Rattus norvegicus

<400> 44

Met Gly Lys Arg Trp Asp Ser Asn Ser Ser Gly Ser Trp Asp His Ile  
1 5 10 15

Trp Ser Gly Asn Asp Thr Gln His Pro Trp Tyr Ser Asp Ile Asn Ile  
20 25 30

Thr Tyr Met Asn Tyr Tyr Leu His Gln Pro His Val Thr Ala Val Phe  
35 40 45

Ile Ser Ser Tyr Phe Leu Ile Phe Phe Leu Cys Met Val Gly Asn Thr  
50 55 60

Val Val Cys Phe Val Val Ile Arg Asn Arg Tyr Met His Thr Val Thr  
65 70 75 80

Asn Phe Phe Ile Phe Asn Leu Ala Ile Ser Asp Leu Leu Val Gly Ile  
85 90 95

Phe Cys Met Pro Ile Thr Leu Leu Asp Asn Ile Ile Ala Gly Trp Pro  
100 105 110

Phe Gly Ser Ser Met Cys Lys Ile Ser Gly Leu Val Gln Gly Ile Ser  
115 120 125

Val Ala Ala Ser Val Phe Thr Leu Val Ala Ile Ala Val Asp Arg Phe  
130 135 140

Arg Cys Val Val Tyr Pro Phe Lys Pro Lys Leu Thr Val Lys Thr Ala  
145 150 155 160

Phe Val Met Ile Val Ile Ile Trp Gly Leu Ala Ile Thr Ile Met Thr  
165 170 175

Pro Ser Ala Ile Met Leu His Val Gln Glu Glu Lys Tyr Tyr Arg Val  
180 185 190

Arg Leu Ser Ser His Asn Lys Thr Ser Thr Val Tyr Trp Cys Arg Glu  
195 200 205

Asp Trp Pro Asn Gln Glu Met Arg Arg Ile Tyr Thr Thr Val Leu Phe  
210 215 220

Ala Thr Ile Tyr Leu Ala Pro Leu Ser Leu Ile Val Ile Met Tyr Ala  
225 230 235 240

Arg Ile Gly Ala Ser Leu Phe Lys Thr Ser Ala His Ser Thr Gly Lys  
245 250 255

Gln Arg Leu Glu Gln Trp His Val Ser Lys Lys Lys Gln Lys Val Ile  
260 265 270

Lys Met Leu Leu Thr Val Ala Leu Leu Phe Ile Leu Ser Trp Leu Pro  
275 280 285

Leu Trp Thr Leu Met Met Leu Ser Asp Tyr Ala Asp Leu Ser Pro Asn  
290 295 300

Lys Leu Arg Val Ile Asn Ile Tyr Val Tyr Pro Phe Ala His Trp Leu  
305 310 315 320

Ala Phe Cys Asn Ser Ser Val Asn Pro Ile Ile Tyr Gly Phe Phe Asn  
325 330 335

Glu Asn Phe Arg Ser Gly Phe Gln Asp Ala Phe Gln Phe Cys Gln Lys  
340 345 350

Lys Val Lys Pro Gln Glu Ala Tyr Gly Leu Arg Ala Lys Arg Asn Leu  
355 360 365

Asp Ile Asn Thr Ser Gly Leu Leu Val His Glu Pro Ala Ser Gln Asn  
370 375 380

Pro Ser Gly Glu Asn Leu Gly Cys Arg Lys Ser Ala Asp Asn Pro Thr  
385 390 395 400

Gln Glu Ser Leu Met Glu Glu Thr Gly Glu Ala Thr Asn Ser Thr Glu  
405 410 415

Thr

<210> 45  
<211> 8  
<212> PRT  
<213> Rattus norvegicus

<400> 45  
Phe Leu Phe Gln Pro Gln Arg Phe.  
1 5

<210> 46  
<211> 18  
<212> PRT  
<213> Rattus norvegicus

<400> 46  
Ala Gly Glu Gly Leu Ser Ser Pro Phe Trp Ser Leu Ala Ala Pro Gln  
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Arg Phe

<210> 47  
<211> 24  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer/probe

<400> 47  
tttgcattttatgtatcat ctgg 24

<210> 48  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer/probe

<400> 48  
aataaaaaagc agggccacaa tcag 24

<210> 49  
<211> 23  
<212> DNA  
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<220>  
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<400> 49  
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23

<210> 50  
<211> 24  
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<220>  
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<400> 50  
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24

<210> 51  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer/probe

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tcttcaagac ctcagcacac agc

23

<210> 52  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer/probe

<400> 52  
gagctggaaa gcttcttggaa aacc

24

<210> 53  
<211> 49  
<212> DNA  
<213> Artificial Sequence

<220>  
<223> Description of Artificial Sequence: primer/probe

<400> 53  
ctgggtgtcg gaggattggc caaaccagga aatgaggagg atctacacc 49

<210> 54  
<211> 25  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer/probe

<400> 54  
gcagtgtcaa ccccatcatt tatgg 25

<210> 55  
<211> 26  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer/probe

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caaagcaaac gacagtgttt cccacc 26

<210> 56  
<211> 26  
<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer/probe

<400> 56  
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<210> 57  
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<220>  
<223> Description of Artificial Sequence: primer/probe

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<210> 58  
<211> 36  
<212> DNA  
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<220>  
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<400> 58  
gtcacggatc cagcctctcc tttgataagg tccacc 36

<210> 59  
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<212> DNA  
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<220>  
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<400> 59  
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<210> 60  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer/probe

<400> 60  
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<210> 61  
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<212> DNA  
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<220>  
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<400> 61

ccgcggcgga agttct

16

<210> 62  
<211> 22  
<212> DNA  
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<220>  
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<400> 62

acagcagcgc caaccccatc at

22

<210> 63  
<211> 18  
<212> DNA  
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<220>  
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<400> 63

cctgatttgta gccctgct

18

<210> 64  
<211> 23  
<212> DNA  
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<220>  
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<400> 64

catttggaga aaggtaagcg tag

23

<210> 65  
<211> 26  
<212> DNA  
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<220>  
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26

<210> 66  
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<212> DNA  
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<220>  
<223> Description of Artificial Sequence: primer/probe

<400> 66  
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19

<210> 67  
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<212> DNA  
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<220>  
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17

<210> 68  
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<220>  
<223> Description of Artificial Sequence: primer/probe

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23

<210> 69  
<211> 24  
<212> DNA  
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<220>

<223> Description of Artificial Sequence: primer/probe

<400> 69

gaggatctac accaccgtgc tatt

24

<210> 70

<211> 21

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 70

gaagccccaa tccttgcata c

21

<210> 71

<211> 29

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence: primer/probe

<400> 71

tctacctggc tccactctcc ctcattgtt

29